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Collaboration in the Middle: Teachers in Interdisciplinary Planning

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How can middle level educators collaborate to promote increased and effective interdisciplinary planning? With increased focus on STEM and STEAM, educators are looking for ways to integrate disciplines. Planning content around a common theme is an avenue for an interdisciplinary approach to teaching and learning in the middle grades. Middle grade educators must find ways to relate content to their students in meaningful ways. Cross-curricular integration of content areas is one way to do that. Providing opportunities for students to explore topics connected across content areas strengthens students' understanding and investigation of real-life applications. Middle-level students require ongoing, concrete, experiential learning in order to develop intellectually (AMLE, 2010) and an integrated curriculum that is more compatible with the way their brains work (Vars, 2001).

Over 60 years of studies provide evidence that middle-level students perform better with an interdisciplinary or integrated curriculum than with departmentalized programs (Irvin, 1997). Historically, educators such as John Dewey, Howard Gardener, and Benjamin Bloom have emphasized the value of contextual learning. An integrated curriculum can provide students meaningful opportunities to connect learning in and out of school (Beane, 1997; Vars, 2001). Integration promotes the relevance of classroom learning by making the curriculum more meaningful to students' lives (Hargreaves & Moore, 2000). Implementing interdisciplinary unit planning will encourage teachers to move beyond their content areas and provide opportunities to create curriculum more relevant to adolescents (Stolle & Frambaugh-Kritzer, 2014). In *This We Believe*, the AMLE (2010) promotes a challenging, exploratory, integrative, and relevant curriculum for middle level students. The learning that takes place in schools should also reflect the world outside the classroom. In life we don't face situations by asking which part is science, which is reading, and so on (Beane, 1993). For example, interdisciplinary tasks can enable students to see mathematics data as more than just numbers. Students will have the opportunity to see numbers with meaning that can impact real-world outcomes (Roy, Eli, Hendrix & Gaul, 2018). We use the knowledge and skills the situation requires to solve problems and address the situation. Exemplary middle-level schools provide a curriculum with integrated units that lasts several weeks and uses complex tasks to answer essential questions rather than day-to-day lessons (AMLE, 2010). When teachers work together on teams to coordinate and integrate instruction, teaching and learning outcomes improve (Mertens & Flowers, 2003).

The Center of Excellence in Middle-level Interdisciplinary Strategies for Teaching (CE-MIST) was established to develop and model state-of-the-art teacher training programs with an emphasis on interdisciplinary curriculum development and implementation at the middle school level. CE-MIST was sponsored through a grant from the South Carolina Commission on Higher Education.

A unique partnership between CE-MIST, three middle schools, and the Aiken Writing Project resulted in the development of twenty-six (and counting) Traveling Interdisciplinary

Literacy Trunks (TILTs). The trunks' introduction was used as the catalyst to connect planning by teachers with activities for students. Ongoing, year-long professional development sessions built on the theme of interdisciplinary strategies for teaching and allowed grade level teachers focused time to collaborate in horizontal planning teams.

The CE-MIST literacy trunks align standards from two or more content areas, are framed by essential questions, and are anchored by writing activities that are connected to learning goals. The trunks' unit plans include activities that allow for active student engagement and are easily adapted for students with different backgrounds and abilities.

The Interdisciplinary Planning Process

Interdisciplinary curriculum can provide learners challenging experiences and opportunities to apply concepts in problem-based applications. An interdisciplinary approach to teaching and learning is ideal for its meaningful connections and relevancy. The reality, however, is that an interdisciplinary approach to teaching is a complicated process. CE-MIST provides a support system and serves as a model for schools wanting to implement an interdisciplinary approach successfully.

Teachers participate in school-based, professional development activities that provide interdisciplinary strategies for teaching that center on a common theme. Teachers collaborate in teams to develop interdisciplinary lessons that will be developed into a grade level unit plan. Teachers work in horizontal planning teams bringing together the academic core and specialty areas with the goal of developing an interdisciplinary "trunk." Grade level teams review academic standards from all content areas, brainstorm instructional possibilities, and choose a theme to unify their standards. Grade level teams are comprised of one teacher from each of the four main content areas: English / language arts, mathematics, science and social studies. Further, teams include at least one additional teacher from another discipline such as music, art, physical education, special education or media arts. The teams collaborate to develop interdisciplinary lessons that include the target of a minimum of three of the content areas with a focus on writing across the curriculum. A "trunk" is the final product of each team that includes a unit plan, lesson plans and materials necessary to facilitate the delivery of the instructional unit to students. Traveling trunks contain lesson plans and materials that can be shared with other teachers within the school and beyond.

As part of a professional development plan used to facilitate interdisciplinary planning with middle level teachers, a Brainstorming Graphic Organizer (See Figure 1) and multiple templates for unit plans, daily lesson plans, and an implementation guide (See Figures 2 - 4) are intricate parts of team collaboration. Writing across the curriculum and varied instructional strategies are emphasized. The units are student-centered, with opportunities for generating and developing topics. The assignments are designed to help students focus, organize, and revise. The units include multisensory activities to address visual, auditory, and kinesthetic modalities, and the students have opportunities to work collaboratively on several projects. Open-ended assignments provide flexibility, and a variety of leveled books are included.

Traveling Interdisciplinary Literacy Trunks (TILTs)

The development of "trunks" is the catalyst to tie interdisciplinary planning by teachers to activities with students. Each TILT completed as part of CE-MIST includes a unit plan,

children's literature, a class set of novels, science equipment, math manipulatives, teacher resource lists, and more.

One of the Traveling Interdisciplinary Literacy Trunks for Grade 6 is based on the theme of Medieval Times. The overarching unit objective is for students to analyze the social, political, and economic facets of life during the Middle Ages in Europe. As part of daily lessons, students will explore elements pertaining to the unit objective in content classes. Students will research scientists, mathematicians, and explorers of the Renaissance. They will create and display a series of "wanted posters" featuring these famous people and their inventions, such as Johannes Gutenberg's printing press. They will make their own paper and ink (or use calligraphy pens) and write using Old English Script. The students will also construct and label a model castle, calculate the castle's perimeter and area, and record the number of faces, edges, and vertices of three-dimensional shapes found in their castles. They will read a novel and dramatize scenes in the book through small group skits. They will write narrative essays and create a narrative journal written from the perspective of a knight, a serf, a peasant, a manor lord, or a monarch. Students will write a first-person monologue based on one of the characters in their literature circle novel. Students will research plants used for medicinal purposes during the Middle Ages and create a presentation of their findings. Students will research the Bubonic Plague and use propaganda techniques to create a commercial to advertise a cure.

Other Grade 6 trunks are *Ancient Egypt* and *The Middle Ages*. Seventh grade units include: *Milkweed (The Holocaust)* and *Remember! Never Forget the Holocaust!* Eighth grade units include: *The Great Charleston Earthquake of 1886*, *South Carolina's Culture and the Cold War of the 1950's*, and *Shake, Rattle & Roll*. There are currently over twenty-five trunks for the middle grades. Additional sample unit plans, activities for writing across the curriculum, and trunk evaluation rubrics may be accessed at http://rpsec.usca.edu/CE-MIST/Trunks/CE-MIST_TILT.html.

Conclusion

This focused effort on interdisciplinary planning has resulted in the creation of curriculum for middle grades that the teachers continue to utilize. In CE-MIST, the teachers have become wholly engaged in the planning and claim gratified ownership of their trunks. Collaborating to build curriculum around common themes has proven fruitful for professional learning and student engagement.

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